

**WHAT IS CLAIMED IS:**

1. A projection exposure apparatus that supplies liquid in a space between a projection optical system and a substrate and transfers a pattern on said substrate via said projection optical system and said liquid, said apparatus comprising:

a substrate table on which a substrate is mounted that can be moved holding said substrate; and

a correction unit that corrects positional deviation occurring in at least one of said substrate and said substrate table due to supply of said liquid.

2. The projection exposure apparatus of Claim 1, said apparatus further comprising:

a position measuring system that measures positional information of said substrate table, wherein

said correction unit corrects positional deviation occurring in at least one of said substrate and said substrate table due to supply of said liquid according to the position of said substrate table measured by said position measuring system.

3. The projection exposure apparatus of Claim 2 wherein said correction unit corrects an error in said positional information in at least one of a substrate and a substrate table measured directly or indirectly by said position measuring system, which occurs due to supply of

liquid.

4. The projection exposure apparatus of Claim 1 wherein  
said correction unit corrects positional deviation that  
5 occurs by a change in the shape of said substrate table.

5. The projection exposure apparatus of Claim 1 wherein  
said substrate table has a fiducial member used for  
position setting, and  
10 said correction unit corrects positional deviation  
between said fiducial member and said substrate.

6. The projection exposure apparatus of Claim 1 wherein  
said correction unit corrects the distance between said  
15 projection optical system and said substrate in an optical  
axis direction of said projection optical system.

7. The projection exposure apparatus of Claim 1 wherein  
said correction unit corrects said positional deviation  
20 according to a physical quantity related to said liquid.

8. The projection exposure apparatus of Claim 5 wherein  
said physical quantity related to said liquid includes  
at least one of pressure of said liquid and surface tension  
25 of said liquid.

9. The projection exposure apparatus of Claim 1 wherein  
said correction unit corrects positional deviation that

occurs by vibration of said substrate table.

10. The projection exposure apparatus of Claim 1, said apparatus further comprising:

5 a mask stage on which a mask having said pattern formed is mounted that can be moved holding said mask; and

said correction unit corrects said positional deviation by changing a thrust given to at least one of said substrate table and said mask stage.

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11. The projection exposure apparatus of Claim 10 wherein

said correction unit comprises a controller that changes said thrust by feedforward control.

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12. The projection exposure apparatus in any one of Claims 1 to 11 wherein

15 said correction unit corrects said positional deviation based on position measuring results of a transferred image of said pattern transferred on said substrate.

13. The projection exposure apparatus in any one of Claims 1 to 11 wherein

25 said correction unit corrects said positional deviation based on simulation results.

14. A stage unit that has a substrate table which movably holds a substrate whose surface is supplied with liquid,

said unit comprising:

a position measuring unit that measures positional information of said substrate table; and

a correction unit that corrects positional deviation  
5 occurring in at least one of said substrate and said substrate table due to supply of said liquid.

15. The stage unit of Claim 14 wherein  
said correction unit corrects positional deviation that  
10 occurs by a change in the shape of said substrate table.

16. The stage unit of one of Claims 14 and 15 wherein  
said substrate table has a fiducial member used for position setting, and  
15 said correction unit corrects positional deviation between said fiducial member and said substrate.

17. An exposure method in which liquid is supplied to a space between a projection optical system and a substrate  
20 held on a substrate table and a pattern is transferred onto said substrate via said projection optical system and said liquid, said method comprising:

a detection process in which a change occurring in at least one of said substrate and said substrate table due to  
25 supply of said liquid is detected; and

a transfer process in which said pattern is transferred onto said substrate based on results of said detection.

18. The exposure method of Claim 17 wherein  
in said transfer process, said transfer is performed  
with at least one of positional deviation that occurs by a  
change in the shape of said substrate table and the distance  
5 between said projection optical system and said substrate in  
an optical axis direction of said projection optical system  
corrected.

19. The exposure method of Claim 17 wherein  
10 in said detection process, a change according to a  
physical quantity related to said liquid is detected, and  
in said transfer process, said transfer is performed  
with said change according to said physical quantity related  
to said liquid corrected.

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20. The exposure method of Claim 19 wherein  
said physical quantity related to said liquid includes  
at least one of pressure of said liquid and surface tension  
of said liquid.

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21. The exposure method of Claim 17 wherein  
in said transfer process, said transfer is performed  
with positional deviation that occurs by vibration of said  
substrate table corrected.

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22. The exposure method of Claim 17 wherein  
in said transfer process, said transfer is performed  
with said change corrected by changing a thrust given to at

least one of said substrate table and a mask stage on which  
a mask where said pattern is formed is mounted.

23. The exposure method of Claim 22 wherein  
5 the change of said thrust is performed by feedforward  
control.

24. The exposure method in any one of Claims 17 to 23  
wherein  
10 said change is corrected based on position measuring  
results of a transferred image of said pattern transferred  
on said substrate.

25. The exposure method in any one of Claims 17 to 23  
15 wherein  
said change is corrected based on simulation results.